REMARKS

Applicants respectfully request reconsideration of the present case in view of the above amendments and the following remarks.

1. Pending Claims

Claims 1-14, 19, 21-22, and 26-34 are withdrawn as directed to a non-elected embodiment or species. Claims 15, 16, and 18 are cancelled above, without prejudice to refile in a subsequent application. Claims 17, 20, and 23-25 are currently amended, and new claim 35 is added. Accordingly claims 17, 20, 23-25, and 35 are currently under consideration.

No new matter has been inserted by the amendments shown above. Support for the amendment of claim 17 can be found in the specification, for example, at least at page 3, line 37, and page 4, lines 11-17. Claims 20 and 23-25 are amended for clarity.

2. Objections to the Specification

The Applicants thank the Examiner for pointing out a clerical error in the specification at page 37, lines 10-16, where sequence ID numbers provided for the gene sequences, SEQ ID NOs. 1 and 2, are amino acid sequences and not gene sequences. The specification has been amended to clarify that SEQ ID NOs: 1 and 2 are amino acid sequences encoded by TCCR polynucleotide sequences. Polynucleotide sequences encoding the TCCR polypeptides are described, for example, at page 15, beginning at line 13. Removal of this objection is requested.

3. Examiner's Rejection under 35 U.S.C. § 112

The Examiner has rejected claims 15-18, 20 and 23-25 under 35 U.S.C. § 112, first paragraph as allegedly lacking enablement. To the extent this rejection is applied to the amended claims, Applicants respectfully traverse this rejection.

The test for enablement is whether one reasonably skilled in the art could make and use the claimed invention armed with the patent specification and with information known in the art, without undue experimentation. *United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8

USPQ2d 1217, 1223 (Fed. Cir. 1988). Applicants assert one skilled in the art is fully enabled to practice the claimed invention without undue experimentation based on evidence provided in the specification and known in the art.

a. The Specification Enables the Claimed Invention

The Examiner acknowledges that one skilled in the art, armed with the knowledge that TCCR regulates a T cell function, would reasonably be expected to make an agonist antibody that would be expected to trigger TCCR activation. Further, the Examiner acknowledges the teachings of the specification, including data obtained from a TCCR "knockout" mouse model demonstrating an exacerbated Th2-mediated immune response in the absence of TCCR signaling. The Examiner also acknowledges the teaching of CD4+ cells derived from TCCR -/- animals having a diminished Th1 response as well as an exacerbated Th2 response.

Applicants submit this *in vivo* and *in vitro* data provided in the specification demonstrates an immune response regulated by TCCR signaling. In the absence of TCCR, an exacerbated Th-2 mediated immune response is demonstrated, while no Th-2 mediated immune response is seen in wild type animals possessing TCCR and capable of TCCR signaling.

The Examiner asserts Lucas *et al.*, 2003, suggesting this post-filing publication teaches against the claimed invention. Applicants respectfully suggest the Examiner has not examined the Lucas reference in its entirety, and thus is misreading the reference. The Lucas publication discloses further studies into the mechanism of TCCR-mediated immune response, using the discovered TCCR ligand, IL27. The publication confirms a role for TCCR signaling in the suppression of Th2-mediated disease. As noted by the Examiner, Lucas et al. finds that IL27/TCCR activation upregulates T-bet expression, but does not induce IFN-γ production in the absence of IL12. However, the reference continues with a description of the effect of IL27/TCCR activation on "the master switch" for Th2 development, GATA3.

> Although IL-27 does not drive the differentiation process of $CD4^+$ cells toward an IFN-γ-secreting phenotype on its own, it certainly represents an important early trigger for TH1 differentiation *in vivo*, as demonstrated by the increased initial

> susceptibility of *TCCR*$^{/wsx\text{-}1}$ knockout mice to infection with intracellular pathogens (16, 17). Our *in vitro* studies show that IL-27, an early product of activated antigen-presenting cells (18), acts on naïve $CD4^+$ T cells by inducing IL-12 responsiveness by means of induction of T-bet and suppression of GATA-3. Therefore, at the time of activation of naïve $CD4^+$ T cell[s] by antigen-presenting cells *in vivo*, IL-27 functions in a paracrine manner to establish IL-12 responsiveness of early developing T_H cells, and consequently contributes to bias the T cell response toward a T_H1 outcome. (Lucas at page 6).

The authors in Lucas report "IL-27 [TCCR agonist] provides an alternative signal for GATA-3 suppression, which depends on STAT1."

The Lucas publication discusses the role of T-bet, GATA3, and IL-12R β2 as "key regulators of T_H cell development." They also demonstrate that "IL-27 provides an IFN-γ-independent signal for the induction of T-bet in developing T_H cells. These also confirm that the TCCR agonist, IL-27, not only induces T-bet, leading to a T_H1 outcome, but also "provides an alternative signal for GATA-3 suppression" thereby suppressing development of T_H2 cells and a T_H2 cell response. Accordingly, applicants assert the claimed invention is confirmed and supported by the Lucas reference, in contrast to the rejections of the Examiner.

Applicants submit the claimed invention is fully supported and enabled by the specification, and is not contradicted by further work directed to understanding the mechanisms by which TCCR signaling impacts the ultimate effect of biasing a T cell response toward a Th1 outcome and away from a Th2 outcome.

Removal of the enablement rejection is respectfully requested.

Previously Submitted Evidence and Argument

In the most recent Office Action, the Examiner refused to consider Applicants Remarks filed in the Response dated August 5, 2005 and citing Huang *et al.* in support of claim 17. The Examiner asserted the cited reference "has not been made of record," and because of this assertion further stated, "neither the evidence therein nor the arguments based on that evidence

have been considered." Applicants respectfully traverse the Examiner's assertion that the evidence may not be considered because it is not of record and point the Examiner to the MPEP §609.05(c), a copy of which is attached. Regarding this issue, the MPEP states in pertinent part:

> "To the extent that a document is submitted as evidence directed to an issue of patentability raised in an Office Action, and the evidence is timely presented, applicant need not satisfy the requirements of 37 C.F.R. §1.97 and 37 C.F.R. §1.98 in order to have the Examiner consider the information contained in the document relied upon by applicant."

Applicants respectfully assert the evidence presented, the cited Huang *et al.* reference, and the remarks made in support of patentability of claim 17 were properly presented to the Examiner and should have been considered. Applicants thereby request that the Examiner give full consideration to the Applicants' prior remarks and evidence, and accord the Applicant a full round of non-final prosecution on the merits.

Anticipation under 35 U.S.C. § 102(a)

The Examiner has rejected claims 15-18, 20, and 23-25 under 35 U.S.C. § 102(a) as anticipated by Mattson et al. (WO 99/40195). To the extent this rejection is maintained for the newly amended claims, Applicants respectfully traverse this rejection.

The Examiner alleges that *Mattson* discloses antibodies that recognize DCRS-1 and because of similarity between TCCR and DCRS-1 alleges that such antibodies would inherently prevent, inhibit, or attenuate the differentiation of T-cells into Th2 cells. Applicants respectfully traverse this rejection.

Inherency requires that the matter is "necessarily present" in the cited reference. *See* MPEP § 2112; *In re Robertson*, 169 F.3d 743 (Fed. Cir. 1999). Applicants remind the Examiner that the instant claims are directed to a method for treating an infectious disease or allergic disorder comprising administering an agonist of TCCR. Such methods of use are not "necessarily" present in the cited reference.

Inherency may not be established by probabilities or possibilities regarding what may have resulted in the prior art. In re Oelrich, 666 F.2d 578, 212 USPQ 323, 326 (CCPA 1981). If a claimed method comprises steps identical to those of a method practiced in the prior art, and the same result would have been achieved in the prior art method, the accidental or unwitting achievement of that result cannot constitute anticipation. In re Marshall, 578 F.2d 301, 198 USPQ 344 (CCPA 1978).

In Marshall, the claims were directed to a weight control process comprising the administering of an anesthetic such as oxethazaine to inhibit release of hormones, thereby preventing release of pancreatic enzymes that would otherwise digest food passing through the digestive tract. The cited reference was the Physician's Desk Reference (PDR), which disclosed use of oxethazaine for treatment of esophagitis, gastritis , peptic ulcer and irritable colon syndrome, and disclosed that this anesthetic inhibited release of the acid-stimulating hormone, gastrin. The CCPA held that the PDR did not disclose every material element of the claimed subject matter because the claims were directed to a weight control process and nothing in the cited reference suggested taking oxethazaine to lose weight.

Applicants respectfully submit that the antibodies disclosed by Mattson would not **necessarily** perform the claimed methods during normal and usual operation. Mattson discloses the sequence of DCRS-1, a cytokine receptor, but fails to provide any specific function of DCRS-1 or any antibody directed thereto. Indeed, Mattson fails to disclose or suggest use of any agonist for treating any specific disorder associated with DCRS-1.

The only disclosure reciting a use of the DCRS-1 molecule is a generalized, non-specific discussion of a potential use in immunological disorders. The instant claims are directed to a specific use for an agonist of TCCR to treat infectious disease or allergic disorders. In contrast to the Mattson disclosure, the instant disclosure provides *in vitro* and *in vivo* evidence as discussed above to provide a specific, credible, and useful utility for an agonist of TCCR. Like the anesthetic of *Marshall*, nothing in the cited reference suggests administering an agonist of TCCR to treat infectious disease or allergic disorders as claimed. Removal of the inherency rejection is requested.

Double Patenting

Claims 15-18, 20 and 23-25 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8-12 of copending Application No. 10/663,158. In response, Applicants request that this provisional rejection be held in abeyance until allowable subject matter is indicated.

Anticipation Rejections under 35 U.S.C. § 102(b)

Claims 15-17 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,792,850. The Examiner alleges that the '850 patent discloses antibodies to a polypeptide that is 100% identical to TCCR, and further discloses administering agonists for stimulating cell-mediated immunity and lymphocyte proliferation. Applicants respectfully traverse this rejection.

The cited '850 patent corresponds to the Mattson PCT Publication WO 97/44455 discussed above and fails to anticipate the claimed subject matter for at least the reason that is fails to disclose every element of the claims either expressly or inherently. The Office Action alleges that the antibodies disclosed in the '850 patent are inherently capable of producing every effect of the antibodies in the claimed methods.

Claim 17 is independent. Claim 17 is directed to a method of treating an infectious disease or allergic disorder, comprising administering an effective amount of an anti-TCCR agonist. Applicants respectfully submit that antibodies disclosed by the '850 patent would not **necessarily** perform the claimed methods during normal and usual operation.

As an initial matter, Applicants point out that the claimed method treats disorders involving antibody producing cells, involving cell mediated immunity. The '850 patent fails to disclose expressly or inherently, methods of treating such diseases by administering an agonist of TCCR. Indeed, the '850 patent expressly discloses the opposite, i.e., that agonists can be used to stimulate cell mediated immunity and lymphocyte proliferation (col. 15, lines 3-15). Applicants respectfully submit that the '850 patent fails to disclose the use of a TCCR agonist antibody for treating infectious disease or allergic disorders, and the rejection should be withdrawn.

SUMMARY

In view of the above amendments and remarks, Applicant respectfully submits the claims are in condition for allowance. Early notice of such allowance is requested.

If the Examiner believes a telephone conference would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

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Date: 7 June 2006

Denise Kettelberger
Reg. No. 33,924

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PATENT TRADEMARK OFFICE

the information was considered in blocks at the bottom of the PTO-1449 or PTO/SB/08A and 08B form. ** For IFW processing, see IFW Manual section 3. If any of the citations are considered, a copy of the submitted list, form PTO-1449, or PTO/SB/08A and 08B, as reviewed by the examiner, will be returned to the applicant with the next communication. Those citations not considered by the examiner will have a line drawn through the citation and any citations considered will have the examiner's initials adjacent thereto. The original copy of the list, form PTO-1449, or PTO/SB/08A and 08B will be entered into the application file. The copy returned to applicant will serve both as acknowledgement of receipt of the information disclosure statement and as an indication as to which references were considered by the examiner. Forms PTO-326 and PTOL-37 include a box to indicate the attachment of form PTO-1449 or PTO/SB/08A and 08B.

Information which complies with requirements as discussed in this section but which is in a non-English language will be considered in view of the concise explanation submitted (**>see MPEP § 609.04(a), subsection III.<) and insofar as it is understood on its face, e.g., drawings, chemical formulas, in the same manner that non-English language information in Office search files is considered by examiners in conducting searches. The examiner need not have the information translated unless it appears to be necessary to do so. The examiner will indicate that the non-English language information has been considered in the same manner as consideration is indicated for information submitted in English. The examiner should not require that a translation be filed by applicant. The examiner should not make any comment such as that the non-English language information has only been considered to the extent understood, since this fact is inherent. See *Semiconductor Energy Laboratory Co. V. Samsung Electronics Co.*, 204 F.3d 1368, 1377-78, 54 USPQ2d 1001, 1008 (Fed. Cir. 2000) ("[A]s MPEP Section 609C(2) reveals, the examiner's understanding of a foreign reference is generally limited to that which he or she can glean from the applicant's concise statement...Consequently, while the examiner's initials require that we presume that he or she considered the [foreign] reference, this presumption extends only to the examiner's consideration of the brief translated portion and the concise statement.").

Since information is required to be submitted in a separate paper listing the citations rather than in the specification, there is no need to mark "All checked" or "Checked" in the margin of a specification containing citations.

If an item of information in an IDS fails to comply with requirements of 37 CFR 1.97 and 37 CFR 1.98, a line should be drawn through the citation to show that it has not been considered. The other items of information listed that do comply with the requirements of 37 CFR 1.97 and 37 CFR 1.98 will be considered by the examiner and will be appropriately initialed.

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609.05(c) Documents Submitted as Part of Applicant's Reply to Office Action [R-3]

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Occasionally, documents are submitted and relied on by an applicant when replying to an Office action. These documents may be relied on by an applicant, for example, to show that an element recited in the claim is operative or that a term used in the claim has a recognized meaning in the art. Documents may be in any form but are typically in the form of an affidavit, declaration, patent, or printed publication.

To the extent that a document is submitted as evidence directed to an issue of patentability raised in an Office action, and the evidence is timely presented, applicant need not satisfy the requirements of 37 CFR 1.97 and 37 CFR 1.98 in order to have the examiner consider the information contained in the document relied on by applicant. In other words, compliance with the information disclosure rules is not a threshold requirement to have information considered when submitted by applicant to support an argument being made in a reply to an Office action. However, consideration by the examiner of the document submitted as evidence directed to an issue of patentability raised in the Office action is limited to the portion of the document relied upon as rebuttal evidence; the entirety of the document may not necessarily be considered by the examiner.

At the same time, the document supplied and relied on by applicant as evidence need not be processed as an item of information that was cited in an information disclosure statement. The record should reflect whether the evidence was considered, but listing on a form (e.g., PTO-892, PTO-1449, or PTO/SB/08A and 08B) and appropriate marking of the form by the examiner is not required.

For example, if applicant submits and relies on three patents as evidence in reply to the first Office action and also lists those patents on a PTO-1449 or PTO/SB/08A and 08B along with two journal articles, but does not file a statement under 37 CFR 1.97(e) or the fee set forth in 37 CFR 1.17(p), it would be appropriate for the examiner to indicate that the teachings relied on by applicant in the three patents have been considered, but to line through the citation of all five documents on the PTO-1449 or PTO/SB/08A and 08B and to inform applicant that the information disclosure statement did not comply with 37 CFR 1.97(c).

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609.06 Information Printed on Patent [R-3]

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A citation listed on form PTO-1449 or PTO/SB/08A and 08B and considered by the examiner ** will be printed on the patent. A citation listed in a separate paper, equivalent to but not on form PTO-1449 or PTO/SB/08A and 08B, and considered by the examiner ** will be printed on the patent if the list ** lends itself to easy capture of the necessary information by the Office printing contractor, i.e., each item of information is listed on a single line, the lines are at least double-spaced from each other, >and< the information is uniform in format for each listed item**. For patents printed after January 1, 2001, citations from information disclosure statements that are printed on the face of the patent will be distinguished from citations cited by the examiner on a form PTO-892. The citations cited by the examiner on a form PTO-892 will be marked with an asterisk. If an item of information is cited more than once in an IDS and on a form PTO-892, the citation of the item will be listed only once on the patent as a citation cited by the examiner.

If the applicant does not provide classification information for a citation, or if the examiner lines through incorrect classification data, the citation will be printed on the face of the patent without the classification information. If a U.S. patent application number is listed on a PTO-1449 or PTO/SB/08A and 08B form or its equivalent and the examiner considers the information and initials the form, the application number will be printed on the patent. Applicants may wish to list U.S. patent application numbers on other than a form PTO-1449 or PTO/SB/08A and 08B format to avoid the application numbers of pending applications being published on the patent. If a citation is not printed on the patent but has been considered by the examiner **the patented file will reflect that fact as noted in **>MPEP § 609.05(b)<.

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609.07 IDSs Electronically Submitted (e-IDS) Using EFS [R-3]

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As of May of 2002 IDSs may be submitted to the Office via the EFS. Applicants can file an e-IDS using the EFS by (A) entering the references' citation information in an electronic data entry form, equivalent to the paper PTO-1449 form, and (B) transmitting the electronic data entry form * to the Office. This electronic form allows only citations of U.S. patents and U.S. patent application publications. No paper copies of U.S. patents and U.S. patent application publications cited in the IDS are required to be submitted by the applicants with the e-IDS. If any references to foreign patent documents or non-patent literature documents (NPLs) or unpublished U.S. patent applications are to be cited, applicants must submit those citations on a separate, conventional paper PTO-1449 (or * forms PTO/SB/08A and/or PTO/SB/08B). A legible copy of each cited foreign patent document, NPL, and unpublished U.S. patent application >(if the cited application is not stored in IFW or the cited information is not part of the specification, including the claims, and the drawings)< must accompany the conventional IDS form and the requirements of 37 CFR 1.97 and 1.98 must be complied with for the IDS to be considered by the Office.

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The requirement in 37 CFR 1.98(a)(2)(iii) for a legible copy of the specification, including the claims, and drawings of each cited pending U.S. patent application (or a portion of the application which caused it